Application Serial No.: 10/646,949
Filed: August 21, 2003
Group Art Unit: 3753



## REMARKS

Claims 1-19 are pending the above application. A request for a one-month extension of time is filed herewith. Reconsideration and allowance of all claims are requested in view of the remarks herein.

*Claim Rejections under 35 U.S.C. § 103*

Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scaringe (U.S. 6,205,803) in view of Eninger et al. (U.S. 5,036,905). Applicant respectfully traverses this rejection.

Scaringe involves an avionics-pod-cooling unit thermal control method and apparatus. Scaringe discloses the use of a first and second condenser 31, 32, that may optionally be packaged as a single unit 34 to conserve space. See col. 5, line 66. As shown by example in Figure 7 of Scaringe, a series of electronic cold plates are located before the compressor 13' and a first condenser 31 is located after the compressor 13' and before a higher-temperature cold plate. Before the refrigerant returns to the series of electronic cold plates, it passes through the second condenser 33. See also col. 5, lines 43-54. As noted at col. 7, lines 4-14, locating the higher-temperature cold plate after the compressor, instead of with the other electronic cold plates, does not effect the compressor performance because the compressor inlet conditions are not changed. Figure 13 of Scaringe, cited by the Office Action, illustrates an instance where the temperature of the higher-temperature cold plate is allowed to be quite high, as the first condenser is omitted entirely. See col. 6, lines 56-60.

Importantly, Scaringe does not disclose a local condenser located on the electronics to be cooled. Only the electronic cold plate and higher-temperature cold plate, both evaporators, are illustrated as co-located with the electronics. See the Figures and also col. 1, lines 11-12.

Eninger involves a heat exchanger having movable radiator panels for use in an orbiting spacecraft. See col. 3, lines 20-43 and col 4, lines 25-35.

Applicant's approach in various embodiments of the present invention is to condense a coolant locally. Claim 1 recites a local condenser disposed proximate the evaporator and a pump having an output coupled to the evaporator inlet. As discussed in greater detail in Applicant's specification in the first and last paragraphs on page 7, a local condenser can provide a high degree of control of the coolant flow independent of gravity effects of, for example, an inverted test head. This approach is substantially different than Scaringe, which does not address gravity or teach a local condenser disposed proximate an evaporator.

Eninger does not overcome the deficiencies of Scaringe. In view of the above remarks, Applicant submits that claim 1 is patentable over the combination of Scaringe and Eninger.

Applicant submits that claims 2-4 are patentable at least by way of their dependency from claim 1.

Claim 5 is patentable over the combination of Scaringe and Eninger at least because Scaringe and Eninger do not teach the step of routing a condensed single-phase liquid coolant off an electronic assembly. As noted above, Scaringe only discloses the electronic cold plate (or higher-temperature cold plate), which is an evaporator, co-located with the electronics to be cooled. Therefore, even if it is assumed that the electronic cold plate is on an electronic

assembly, Scaringe at best discloses routing evaporated refrigerant from the electronics and does not disclose routing a condensed single-phase liquid coolant off an electronic assembly. Eninger does not overcome this deficiency.

Claim 6 is patentable at least by way of its dependency from claim 5.

Claim 7 is patentable over the combination of Scaringe and Eninger at least because Scaringe and Eninger do not teach means for condensing disposed on an electronic assembly. See the discussion above.

Claim 9 patentable over the combination of Scaringe and Eninger at least because Scaringe and Eninger do not teach a single-phase coolant path disposed in parallel with the evaporator, coupled to the evaporator outlet to mix sufficient single-phase coolant with the two-phase coolant and condense the two-phase coolant to a single-phase coolant. See Figure 6, for example. Applicant notes that the Office Action does not address the configuration of claim 9 specifically.

Claims 8 and 9 are patentable at least by way of their dependency from claim 7.

Claim 10 is patentable at least because the combination of Scaringe and Eninger does not teach means for routing a condensed single-phase liquid coolant off the electronic assembly. See the discussion above.

Claims 11-15 are patentable at least by way of their dependency from claim 10.

Claim 16 is patentable at least because the combination of Scaringe and Eninger does not teach a local condenser, as discussed above in relation to claim 1.

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Claims 17-19 are patentable at least by way of their dependency from claim 16.

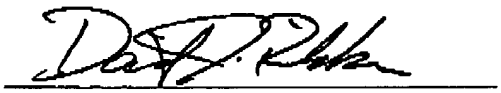
CONCLUSION

In view of the remarks set forth above, it is respectfully submitted that this application is in condition for allowance. Accordingly, allowance is requested.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 50-3431. Should no proper payment be enclosed herewith, as by a check or credit card payment form being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 50-3431. If any additional extensions of time are needed for timely acceptance of papers submitted herewith, Applicants hereby petition for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 50-3431.

Respectfully submitted,

Date August 21, 2006

By 

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